

WHAT IS CLAIMED IS:

1. A suture locking assembly for use with a heart valve repair device, the suture locking assembly comprising:
 - a rim defining a first flange and a second flange spaced from the first flange, the rim configured to extend at least partially around a periphery of the heart valve repair device; and
 - a suture band maintained between the first flange and the second flange;wherein the suture locking assembly is configured to securely maintain a suture segment that is pulled from a first position to a second position relative the suture locking assembly, the second position being at least partially defined near an outer periphery of the rim.
2. The suture locking assembly of claim 1, wherein the suture is at least partially positioned between the suture band and the rim in the second position.
3. The suture locking assembly of claim 1, wherein the suture is at least partially positioned between the suture band and the rim in both the first and second positions.
4. The suture locking assembly of claim 1, wherein the rim defines a plurality of recesses, each of the plurality of recesses defining the first position for one of the at least one sutures.
5. The suture locking assembly of claim 1, wherein the rim defines a plurality of stop sites, each of the plurality of stop sites being spaced from each of the plurality of recesses and impeding suture movement from the second position to the first position.

6. The suture locking assembly of claim 5, wherein each of the plurality of stop sites defines the second position for one of the at least one sutures.
7. The suture locking assembly of claim 1, wherein the rim defines a plurality of segments, each segment defining a recess and at least one stop site.
8. The suture locking assembly of claim 1, wherein the suture locking assembly is configured to receive a suture in each of the plurality of segments.
9. The suture locking assembly of claim 1, wherein the suture locking assembly is configured to receive two sutures in each of the plurality of segments.
10. The suture locking assembly of claim 1, wherein the rim and the suture band are each a closed ring.
11. The suture locking assembly of claim 1, wherein the rim is integrally formed with the heart valve repair device.
12. The suture locking assembly of claim 11, wherein the rim is homogenously formed with a stent of the heart valve repair device.
13. The suture locking assembly of claim 1, wherein the rim is formed separately from the heart valve repair device.
14. The suture locking assembly of claim 1, wherein the rim is formed of plastic.
15. The suture locking assembly of claim 1, wherein the suture band and rim are configured to secure a heart valve repair device to a valvular rim.

16. The suture locking assembly of claim 15, wherein the suture locking assembly is configured to be positioned adjacent a sewing ring of the heart valve repair device.
17. The suture locking assembly of claim 15, wherein the heart valve repair device is a tissue heart valve mechanism.
18. The suture locking assembly of claim 17, wherein the suture band is configured to fit snugly around the stent of the tissue heart valve mechanism.
19. The suture locking assembly of claim 15, wherein the heart valve repair device is a mechanical heart valve mechanism.
20. The suture locking assembly of claim 1, further comprising:
a plastic cover attached to the suture locking assembly opposite the rim,
wherein the suture band is maintained between the rim and the plastic cover.
21. The suture locking assembly of claim 1, wherein the suture locking assembly of claim 1, wherein the suture band is formed of a metallic material.
22. The suture locking assembly of claim 1, wherein the rim is at least partially covered by a fabric cover to couple the rim with the heart valve repair device.
23. The suture locking assembly of claim 1, wherein the rim includes a band coupling member to facilitate maintaining the suture band between the first and second flanges.

24. The suture locking assembly of claim 1, wherein the heart valve repair device is an annuloplasty band.

25. The suture locking assembly of claim 1, wherein the heart valve repair device is an annuloplasty ring.

26. The suture locking assembly of claim 1, wherein the rim and the suture band are each arcuately shaped.

27. The suture locking assembly of claim 26, wherein the rim defines a first end and a second end and includes a first end cap on the first end and a second end cap on the second end to facilitate maintaining the suture band between the first and second flanges.

28. The suture locking assembly of claim 1, wherein the suture band defines a cutout configured to securely maintain the suture in the second position.

29. The suture locking assembly of claim 28, wherein the cutout is a U-shaped cutout and the suture is maintained between the cutout and a remainder of the suture band when in the second position.

30. The suture locking assembly of claim 1, wherein the suture band defines an engagement section including a connection body flanked by an outflow cut and an inflow cut, the engagement section being configured to securely maintain the suture in the second position over the connecting body.

31. The suture locking assembly of claim 30, wherein the suture band defines at least one lateral stop rib configured to impede suture movement from the second position to the first position.

32. A method of implanting a heart valve repair device, the method comprising:
providing a heart valve repair device;
providing a suture locking assembly including:
a rim extending along an outer periphery of the heart valve repair device, the rim defining a first flange and a second flange spaced from the first flange, and
a suture band maintained between the first flange and the second flange;
positioning the heart valve repair device, and the suture locking assembly within a patient;
sewing a suture through the valvular rim in a first position relative the rim and the suture band; and
pulling the suture to a second position relative the rim and the band, wherein the suture is secured with respect to the rim and the suture band in the second position, the second position is at least partially defined near an outer periphery of the rim
wherein securing the suture in the second position at least partially secures the heart valve repair device with respect to the valvular rim.
33. The method of claim 32, wherein the suture extends at least partially between the rim and the suture band in the first position.
34. The method of claim 32, wherein the suture extends at least partially between the rim and the suture band in the second position.
35. The method of claim 32, wherein the rim is integrally formed with the heart valve repair device.

36. The method of claim 32, wherein the rim is formed separately from the heart valve repair device.

37. The method of claim 32, wherein providing a suture locking assembly includes placing the rim adjacent an external portion of the heart valve repair device.

38. The method of claim 32, wherein the rim forms a plurality of lateral recesses periodically spaced about the rim, each of the lateral recesses defining a first position for one of the plurality of sutures, and the step of sewing a suture in a first position is repeated for each of the plurality of lateral recesses.

39. The method of claim 38, wherein pulling the sutures to a second position includes pulling each of the sutures in a first direction with respect to the first position of the suture.

40. The method of claim 38, wherein the step of sewing a suture in a first position is repeated twice for each of the plurality of lateral recesses.

41. The method of claim 40, wherein pulling the sutures to a second position includes pulling at least one of the sutures from the first position in a first direction and pulling at least one of the other sutures from the first position in a second direction to cross the sutures pulled in the first and second directions.

42. The method of claim 41, wherein sewing a suture in a first position for each of the plurality of recesses includes crossing two of the suture with one another.

43. The method of claim 38, wherein the rim defines a plurality of second positions, each second position being spaced between each of the plurality of lateral

recesses, the step of pulling the suture to a second position is repeated for each of the sutures sewn in a first position.

44. The method of claim 38, wherein the rim defines a plurality of second positions, two second positions being defined between each of the plurality of lateral recesses, the step of pulling a suture to a second position is repeated for each of the sutures sewn in a first position.

45. The method of claim 32, wherein the suture band defines a U-shaped cutout, and pulling the suture to a second position includes pulling the suture into the U-shaped cutout.

46. The method of claim 32, wherein the suture band defines an engagement section including a connecting body flanked by an outflow cut and an inflow cut, and pulling the suture to a second position includes pulling the suture through the inflow and outflow cuts.

47. The method of claim 46, wherein the suture band defines at least one lateral stop, and pulling the suture to a second position includes pulling the suture over the at least one lateral stop rib.

48. The method of claim 32, wherein sewing a suture in a first position is repeated for a plurality of sutures, and pulling the suture to a second position includes forming a hitch with two adjacent sutures.

49. The method of claim 48, wherein pulling the suture to a second position includes pulling the hitch to position the hitch between the rim and the suture band.

50. The method of claim 32, wherein the step of pulling the sutures to a second position includes using a suture holder to pull the sutures.

51. A suture holder for use in suturing a heart valve repair device with a suture locking assembly to a heart valve annulus, the suture holder comprising:

- a shaft defining a first end and a second end, the first end configured to interact with the suture locking assembly; and
- a translating member slidably coupled to the shaft between the first and second ends and being configured to selectively receive and maintain at least one suture.

52. The suture holder of claim 51, further including:

- a stop positioned along the shaft and configured to maintain the translating member in a first position spaced from the first end of the shaft.

53. The suture holder of claim 51, wherein the translating member is rotatable about the shaft.